

CLAIMS

1. An optical switch for switching combinations of optical paths between a plurality of optical fibers, comprising:

a device body with at least three optical fibers being led out therefrom; and

a switching optical block housed in the device body so as to be optically coupled to the respective optical fibers,

the optical block comprising:

a lens block having one surface side to place the optical fibers on, and having a plurality of collimating lenses placed side by side in the device body;

a prism which is placed distantly from the lens block on the other surface side of the lens block such that the direction of travel of light incident from the optical fibers through the collimating lens is changed to be directed toward a further optical fiber;

a switching mirror placed to be insertable and removable into and from between the lens block and the prism; and

an actuator for driving the mirror,

wherein the respective optical fibers are led out from the one surface side of the device body.

2. The optical switch according to claim 1, wherein the lens block has the plurality of integrally formed collimating lenses.

3. The optical switch according to claim 2, wherein the lens block has fixed thereto ferrules holding the respective optical fibers, respectively.

4. The optical switch according to claim 3, wherein the bonding surfaces between the lens block and the ferrules are formed by planes inclined at an angle to at least some extent relative to planes perpendicular to axes of passing light beam.

5. The optical switch according to claim 4, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

6. The optical switch according to claim 3, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

7. The optical switch according to claim 2, wherein the bonding surfaces between the lens block and the ferrules are formed by planes inclined at an angle to at least some extent relative to planes perpendicular to axes of passing light beam.

8. The optical switch according to claim 7, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

9. The optical switch according to claim 2, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

10. The optical switch according to claim 1, wherein the lens block has fixed thereto ferrules holding the respective optical fibers, respectively.

11. The optical switch according to claim 10, wherein the bonding surfaces between the lens block and the ferrules are formed by planes inclined at an angle to at least some extent relative to planes perpendicular to

axes of passing light beam.

12. The optical switch according to claim 11, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

13. The optical switch according to claim 10, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

14. The optical switch according to claim 1, wherein the bonding surfaces between the lens block and the ferrules are formed by planes inclined at an angle to at least some extent relative to planes perpendicular to axes of passing light beam.

15. The optical switch according to claim 14, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.

16. The optical switch according to claim 1, wherein the optical block comprises one optical bench contained in and mounted on the device body for positioning and fixing the lens block, the prism and the actuator.